Notebook, N-88-03-30

This notebook, which covers the period March-July 1888, is a continuation of N-88-02-17. The book contains notes by James W. Gladstone regarding tests of chemical compounds for phonograph cylinders, tobacco bleaching, and battery solutions. Inserted into the book are 2 pages, one of which is a list by Edison of solutions. The spine is labeled "62." The pages are unnumbered. Approximately 130 pages have been used.

XE-172 N-88-03-30

March 30th 1888

Photographic Cylinders

Pan No 5 contains
100 White Glue
25 Glycerine
Two soft NG

Pan No 1 100 White Glue
25 Glycerine
Two soft NG

Pan No 4 100 White Glue
25 Gum Arabic
Two soft NG

Pan No 2 100 White Glue
20 Glucose
Two soft NG

March 31st 1888

Pan No 3 100 Gum Arabic
20 Glycerine
Two soft NG

Pan No 10 100 Gum Dextrine
20 Glycerine
Two soft NG

Pan No 8 100 Gum Dextrine
10 Sugar Candy
Two soft NG

Pan No 11
100 pearl Gum Dextrine
20 Egg Albumen
won't mix

Pan No 7 100 Gum Dextrine
10 " Arabic
too soft N G

Pan No 6 100 Dextrine
10 Carbolic Acid
too soft N G

Pan No 12 100 Glue
20 Chloride Zinc
Very Soft N G

Pan No 13 100 Glue
100 Gum Tragacanth
too soft N G

Pan 8 100 Glue
100 Gum Mahogany Resin
too soft N G

Pan 6 100 Glue
100 Gum Animi
too soft N G

100 Glue
100 Potatoe Starch
too soft N G

100 Glue
20 Egg Albumen
Won't mix

100 Gypsum
50 Paraffine
50 White Pitch Wax won't do
50 Canada ~~too~~

100 Gypsum won't do
50 Paraffin
50 White Pitch Wax
50 Canauba Wax

Monday 2 April 1888.
100 Glue
50 Glycerine
50 Water won't solidify N G

100 Glue
100 Resin
25 Castor oil won't solidify N G

100 Glue
20 Glycerine
50 Flour ✓ wont solidify NG

100 Glue
20 Glycerine
50 Carbonate Potash ✓
100 Rain
25 Castor Oil ✓ wont solidify NG

100 Glue
150 Logwood ✓ too soft N G

100 Glue
100 Gum Dammar wont mix

100 Glue
100 Gum Mastic ✓ Too soft N G

100 Glue
100 Gum Tacamahac wont mix

100 Glue
100 Gum Senegal ✓ Too soft NG

100 Glue
50 Rosin Acid Too soft NG

100 Glue
50 Comfshor wont mix

100 Glue
50 Gum Thus Too soft N G

100 Glue
200 Gibbs Alves Too soft N G

100 Glue
400 Gilsyn Gedda Too soft NG

100 Gum Asphaltum
400 Stearyne Wont mix

Tuesday 3 April 1888

100 Gum Arabic solution Saturated
50 Litharge
Wont solidify -

100 Gum Arabic
50 Litharge
250 Borax
Solidifies into lumpy mass NG

100 Gum Arabic Sat Sol NG
50 Borax
Solidifies into lumpy mass

100 Gum
100 Borax
Forms very stable mix of Gum NG

100 Gum Arabic
50 Violet Anyline too soft NG

100 Gum Arabic
50 Ammonia Citrate Iron
wont harden NG

100 Gum Arabic
50 Ammonio Citrate Iron
Flour
wont mix NG

100 Gum Arabic
50 Apomatto -
wont harden NG

100 Gum Arabic
25 Cyanide Potassium
wont solidify NG

100 Gum Arabic
5 Lactic Acid
wont solidify NG

100 Gum Arabic
15 Glacial Phosphoric Acid -
too soft NG

100 Gum Arabic
20 Boracic Acid.
too soft NG
does not mix properly -

Gum Arabic 100
Irish Moss 50
Str
Won't Harden NG

Glue 100
Bichromate Potash Solution 100
Won't solidify NG

Wednesday 4 April 1888

Stearine 100
Olive Oil 50
Palm Oil 50
Sol Sil Soda 20
Salt 10

too soft

Olive Oil 100
Sol Sil Soda 20
Resin 20
Salt 10

no bind -

Olive Oil 100
Sat Soda 20
Salt 10

NG

Olive Oil 100
Litharge 50
Water 100

wont solidify -

Carb Soda 100
Peroxide Lead 50 to red heat.

too hard + stony -

Thursday 5 April 1888.

Evaporated Gelatin redissolved in water + acetic acid.
100 water
10 acid

Gelatin Solution with water treated with Sulphuric Acid -

Gelatin Solution with water
treated with Tannic Acid +
then evaporated.

Gelatin Solution with water treated
with Tannic Acid + then 25% of melted
Sugar added to the solution

7% Gelatin Sat Sol -
25% Boracic Acetic Acid -

Gelatin + Picric Acid

Gelatin + Bichromate Potash
Spongy Elasticmass -

Gelatin + Chromic Acid
(worked up)

Gelatin + Molysdic

Gelatin + Citric Acid -

Gelatin + Sulphide Arsenic
when hot not set/4 -

Gelatin + Sulphur

Gelatin + Carbonate Lead

Gelatin + Molybdic Acid

Gelatin + Gallic Acid
Tends to stop scum from rising to surface

Gelatin + Sulphate Manganese
very Spongy + strong

Gelatin + Cobalt Blue

Gelatin + Chlorate Potash

Gelatin + Nitrate Potash

Gelatin + Sulphuret Antimony

Friday 6 April 1888

Gelatin + Sulphate Ammonia
Elastic Dough Stringy
best

Gelatin + Sulphate Alumn N G

Gelatin + Sulphate Baryta N G

Gelatin + Sulphate Strontian N G

Gelatin + Sulphate Magnesia
Elastic Dough Stringy

Gelatin + Sulphate Potash
Elastic Dough Stringy

Gelatin + Sulphate Soda
Elastic Dough Stringy

Gelatin + Oxalate Soda N G

Glue + Permanganate Potash

Glue + Sulphate Soda
Stringy + Sticky

Glue + Sulphate Ammonia
Elastic Dough Stringy
Equal parts

Glue + Sulphate Magnesia
Stringy + Viscous

Glue + Sulphate magnesia
+ Bichromate Potash
Stringy + Viscous

Saturday 7 April 1888

Gelatin + Blood Albumen

Gelatin + Blood Albumen + Bichrom Potash

Gum Arabic + Sulphate Potash

Gelatin + Egg. Albumen

Gum Arabic + Tragacanth

Gelatin - Palm Oil / Sulph. Ammonium. Alcohol

Gelatin + Carbonate / Magnesia

Gelatin + Boracic / Acid

Gelatin + Boracic / Acid + Bichr Potash

Gelatin + Ammonio / Citrate Iron
Sticky / Jelly / Wh. Substance

Gelatin + Sulphate Iron
Stringy + Elastic / Sticky

Gelatin + Residue after distilling Liquor Nl

Gelatin + Microcosmic Salt
Phosphate Soda + Ammonium
Stringy + Elastic

Gelatin + Natrium Nitroprusside
not sticky
Only Stringy + Elastic

Gelatin + Stannate / Soda

Gelatin + Sulphocyan / Potassium

Gelatin / Bone Balsam + Caustic Potash NG

Gelatin + Sulphate Copper

Gelatin + Oxide Antimony

Gelatin + Hyposulphite Soda
not sticky / Jelly stringy + Elastic

Gelatin Mitr + Phosphate Soda
N
Stringy + Elastic

Monday 9th April 1888

Gelatin + Ammonia / forms a Jelly
not sticky

Gelatin + Ammonia + Sulphate Ammonia
+ Glycerine
NG

Glucose + Ammonia + Tannic Acid =
?

Gelatin + Ammonia + Bichromate Potash

Gelatin + Calcic Nitrate
NG

Gelatin Calcis Nitratis Ammonia

Gum - Glucose Ammoniac Tannic Acid

Gelatin - Ammoniac Gum Arabic -

Gelatin + Dry Sym. Decoct.

Gelatin + Oxide Bismuth

Gluc + Gelatin + Oxide Bismuth

Gluc + Carbolic Acid This it

Gum + Carbolic Acid + Glycerine

Gum + Canada Wax + Carbolic Acid

Dry
Palmitinic Acid 15 grms.
1 { Caustic Soda 2½ —
Water 40 cubic centimetres
A

2 { Chloride Alumina 4 grms.
Water 20 cubic centimetres.

Warmed gradually when cold
Dry soft.

Palmitinic Acid 15 grms.
1 { Caustic Soda 6 grms
Water 40 cubic centimetres
B

2 { Chloride Alumina 4 gr
Water 20 cubic centimetres

1 + 2 mixed gradually when cold.

Rosin 22½ grm
1 { Caustic Soda 8 grm
Water 40 cubic centimetres
C.

2 { Chloride Alumina 4 gr
Water 20 cubic centimetres

1 + 2 mixed gradually + carefully washed afterwards 4 or 5 times

Canada Wax 70 %
Bi mixture 30 %
D

A. B. C + D experiments were made in Dr Millspaugh's room under his guidance -

Tuesday 10 April 1888

Cleaning & putting away apparatus used for ~~my~~ under work - -

~~Hot Lactic Acid~~

Today 11 April 1888

Wednesday

1 Lactic Acid -
2 Commercial Alcohol.
3 Acetic Acid pur.
4 4 drops Nitric acid 5 in water
5 5 drops Sulphuric Acid in water
6 5 drops Hydrochloric Acid in water
7 { 3 drops Sulphuric Acid / 3 —— Nitric Acid } in water
8 { 7 drops Sulphuric / 4 — Hydrochloric Acid
9 { 4 drops Nitric / 3 — Hydrochloric
10 { Equal parts Sat Sol Lewis Lig & Water
11 Silicate Soda Liquid
12 10 drops Carbolic Acid & Water -
13 10 drops —— in Ether -
14 Liquor Ammonia 26% -

Lights NG

15. Alum Acid & Water - 500 mg & water
16. Ammonia Nitrate Iron & Water (100 mg + aq)
17 Molybdic Acid & Ammonia (100 mg & Aq)
18 1 gram green vitriol & Water
19 Chlorine water
20 Ether Nitrous ver 15%
21 Ether ozonic
22 Alcohol Propylic 1/2
23 Brebin 1/2
24 Aceton 1/2
25 Benzole 96%
26 Toluene
27 Naptha -
28 Alcohol Butylic (iso)
29 Oil of Wyrbane.
30 ~~Rhig~~ Rhigolene -
31 Chloroperlelia
32 Methyl
33 Alcohol Amylic -
34 Ligroin -
35 Acetate Amyl
36 Amilozoxyhydrat
37 Chloral hydrate 1/2
38 Isobutic alcohol
39 Paraldehyd Abstract

40 Nitrate Amyl
46 Benzoic Acid concentrated 1/2
41 Chloric Acid 1/2
42 Formic Acid 1/2
43 ~~Hydrochloric acid~~ Acid Perchloric acid pure 1/2
44 Acid phosphoric 1/2
45 ~~Acetic Acid~~ Sulphovinicum Acid 1/2
47 Pyroligneous Acid
48 Bromine 1/4
49 Ammonium Chloride Sol.
50 Hydrosulphuret Ammonia 1/2
51 Nitrite Ammonia 1/2
52 Acid 1/2
53 Sat Sol Chloride Manganese 1/2
54 Chloride Sulphur 1/2
55 Calcaria Bisulphurosa 1/2
56 Silicate Potash
57 Nitrate Iron Sol
58 Sulphide Ammonia 1/2 oz
59 Bichromate Potash Sol
60 Chloride Barium 10% 1 oz
61 Tannic Acid Malic

62 Tasolinic
63 Nitrate Hydrogen
64 Segni Chloride Iron Sol
65 Methyl Alcohol
66 Bromic Acid
67 Hydrate Bismuth
68 Nitrate Cobalt
69 Sol Nitrite Potash
70 Hydro Sulphuric Acid
71 Calcium Nitrate
72 Gallic Acid
73 Sol Stann Ac + Hydrochloric Acid
74 Bisulphide Carbon
75 Chloroform
76 Hypochlorite Soda 1pt 4 wat
77 Micrococcus Salt 1pt 4 wat
78 Chloride Barium 500 mg 4 wat
79 Chloride Calcium 500 mg
80 Prussiate Soda 500 mg
81 Sulphate Ammonia 500 mg
82 Carbolic Acid Alum
83 Anhydrous Acid Barium
84 Permang Potash 50 mg + water
85 Bicarbonate Potash 100 mg 4 wat
86 Sulphate Alum
87 Sulphate Potash
88 Bicarbonate Soda

101 5 gram Citric Acid to 1 oz water —
102 Bromine Gas —
103 20 drops Bromine Acid
104 { 30 " Nitric Acid } added to Nitric Hydro ⊖ —
      { 20 " Hydrochloric } to Hydro Nitric
105 { 30 Sulphuric } in water
      { 30 Nitric }
106 60 drops Nitric Acid in water

89 Natrium Wolframic 100 mg to water
90 Sulphate Soda —
91 Carbonate Potash
92 Nitrate Potash
93 Nitrate Soda
94 Bichloride Iron Chemical Strength
95 Sulphate Magnesia —
96 Acid Acetic 1/2 —
97 Benzoic Acid
98 Red Oxide Iron
99 Stannate Soda
100 Citrate Ammonia —

Friday

107 Chloride Lime Solution
108 Hypochlorite Alum —
109 — Zinc —
110 — Potash —
111 — Iron —
112 — Soda —
113 Fuming Sulphuric Acid
114 — Hydrochloric —
115 — Nitric —
112½ Hypochlorite Soda + Alum equal

Saturday 14 April

116 Suspended in Chlorine

117

118 Sulphurous acid

119 Bromine vapor

120 Chloride Sulphur vapor

121 Oxygen Gas

122 Ozone

123 Ozone

Monday 16

124 Immersed in Ammonia Water
+then suspended in Chlorine

125 Equal parts Ammonia water & Chlorine water

126 Immersed in
+then suspended in Chlorine -

127 Immersed in Ammonia Water
+then suspended in SO_2

128 Suspended in gas from Sulphuric & Nitric acid + Brush gross -

129 Immersed in Nitrate Potash Sol.
+then in Chlorine -

130 Immersed in Nitrate Ammonia Sol
+ then in Chlorine -
Bleaches at once.

131 Immersed in Nitrate Soda Sol
+then Chlorine

132 Suspended in dilute Acids

133 bottom half soaked in Nitrate Ammonia + top left to dry
then all dried + suspended in Chlorine -

134 Immersed in Calcic Nitrate
+ then Suspended in Chlorine

135 Immersed in Solution of Chloride Calcium & Alcohol

136 Oxygen made with Prussiate Barium & Sulphuric Acid

Tuesday 17 April

137 Nitrous Acid Vapour

138

139 Chlorine –

140 after heating in Nitrous Acid vapour immersing in Alcohol –

Dried Spiral 134. 138 & 15

141 Immersed in Prussiate Hydrogen & suspended in Chlorine

Dried electrolysis of water – N.G.

142 Ether –

Wednesday 18 April 1888

143 Suspension in equal quantities Chlorine & Nitrous Acid vapours

144 do do do –

145 Suspension in Nitrous Acid –

146 Nitrous Oxide –

Dried suspending in Chlorine water

Passing currents through with Platt Elect.

. do do in Chloride Lime water

. do do in Nitrate Ammonia Solution

147 Suspension in Sulphurous acid.

148 " " Chlorine & then in Sulphurous acid –

149 Sprayed with 10% Caustic Soda in water & Suspended in Chlorine.

Thursday 19th April 1888

150 Sprayed with 5% Caustic Soda in water & Suspended in Chlorine

151 Sprayed with 10% Caustic Soda partially dried in air & Suspended in Chlorine

152 Sprayed with 5% Caustic Soda partially dried in Air & Suspended in Chlorine

153 Sprayed with 10% Caustic Soda & Suspended in Chlorine

154 Suspended in Chlorine

155 Sprayed with 5% Caustic Potash & Suspended in Chlorine.

156 No 4 put in a damp cloth damped with 5% Caustic Potash & then Cl longer piece.

157 Air dried flask sample put in damped cloth as above & then Cl. Shorter piece.

158 Put in Chlorine without treating first

159 Soaked in Tobacco water then suspended in Cl in vapour then in Chlorine

160 Soaked in Tobacco water hung in air to dry partially then suspended in Nitrous acid vapours.

161 Suspended in ~~NO~~ NO_2

162 } Little Ammonia poured into Bottle containing remainder of Cl.

152½ } dipped in Tobacco water & hung out to dry.

162 Suspended in $N.O._2$

163 Suspended in NO_2

Friday 20 April 1888

164 Sprayed in Lime Water
+ Suspended in Chlorine

165 Steamed + Suspended
in Chlorine

166 Sprayed with Lime Water
+ Suspended in NO_2

167 Sprayed with Ammoniated
+ Suspended in NO_2

168 Sprayed NH_3 + SO_2 + H_2S

Dried continuous stream of ozone
by passing current of air through
the space between a set of Brass
& induction coil plates Brackets

Saturday 21 April 1888

Boiled Leaf in Peroxide of Hydrogen
Suspended 115 previously coloured
by Nitrous Oxide in Sulphuretted
Hydrogen.

169 170 171 172 Chlorine Gas.

173 Suspended Leaf previously bleached by
NO_2 in Sulphuretted Hydrogen

Monday 23 April 1888.

174 Immersed leaf in Log Water
1889 H 50

Passed NO_2 into Solution

175 after 5 hours bleaching it bubbled it
Dry Leaf Suspended over Chloride Lime

176 ——— Leaked ———

177 Sprayed with 5% H_2SO_4 + H_2S + Chloride Lime

178 Sprayed with 5% Sulphurous Acid
+ Suspended in Nitrous Oxide

179 Sprayed with 5% Sulphuric Acid SO_3
+ Suspended in Nitrous Oxide Chlorine

Tried 5% Hydro Sulphuretted Ammonia
Gt after Nitrous Acid vapour.
Tried 5% do do.
180 Sprayed with 5% Nitric Acid
Sol + Suspended in Chlorine.
181 Sprayed with Peroxide
Hydrogen + Suspended in
Chlorine in sunlight —
182 Sprayed with 1/pt HCl +
dorRom 1 23/pt ~~H2O~~
Chlorine
+ Suspended in Cl —
183 Immersed in 1/pt HCl
23/pt ~~H2O~~
Chlorine
184 Sprayed with Peroxide Hydrogen
+ Suspended in NO2

Tuesday 24 April 1888

185 Suspended in ozone made by
Phosphorus Slowly oxidized —
186 Suspended in Hypobromous acid
187 Sprayed with Peroxide Hydrogen
+ Suspended in Hy Bromous acid
Tried 5% Ammonia Hydrosulphuret 1/4 hr
after Suspension in Chlorine — NG
Tried 5% Ammonia Water bath +
then 5% Sulphuric Acid Water bath
on leaf previously suspended in
Chlorine.
Used Peroxide Hydrogen with small
quantity Hcl & with Manganese to
liberate free oxygen —
188 Leaf in Sulphuretted Hydrogen
189 Immersed in Solution Sulphuret
Potassium + Hydrochloric Acid dilute
1/4 dilute

190 Peroxide Hydrogen + Peroxide Manganese added to bring off oxygen Leaf Suspended in the gas

191 Immersed in equal quantities Chlorine Water + Peroxide Hydrogen –

192 Immersed in Chlorine water + Acetate Potash –

193 Sprayed with 10% solution Acetate Potash + Suspended in Chlorine.

Wednesday 25 April 88
Photographing Helping
194 Sprayed 10% Acetate Pot + Suspended in NO
195 Dried 1 spl 162 leaf suspended in NO + dried / Immersed in 10% Sol Acetate Potash.
196 Dried 18 1/2 % Sprayed with Peroxide Hydrogen + Suspended in Chlorine in Sol Acetate Potash 10% Water

197 Dried 18 with 20% Acetate Potash.
198 Dried Nitrous Acid cure in Solution 10% Hyposulphite Soda
199 Dried Nitrous acid cure in Solution 5% Sulphite Potash.
200 Dried Nitrous acid cure in Solution 50% Bisulphite Soda –
201 Dried Nitrous Acid cure in Solution 2% Carbon Potash
202 Leaf in solution equal part say 5% Oxalic Acid + Salt + 90% canal
203 Leaf in solution 5% Sulphite Pot
204 ——— 5% Bisulphite Soda
205 ——— 5% Acetate Pot.
206 NO vapor with Sat Sol Carbon Potash shaken up to neutralize Nitrous acid vapor
Leaf Suspended –

207 Nitrous ~~Oxide~~ Oxide Gas
~~immersed in~~ Peroxide Hyd.
& 10% Acetate Pot.

208 Leaf immersed in Perox
Hyd + 10% Acetate Pot

Thursday 26 April 1888.

209 Sprayed with Ammonia water +
then with Peroxide Hydrogen N G.
Photographing 2½ hours -

Made apparatus for obtaining Ozone
from Oxygen gas by brush discharge
When worked I found ozone ozonized
Copper brushes instead of attaching
leaf

Friday 27 April 1888

211 Tried same experiment but with
Platinum brushes - - -

212 Sprayed with Peroxide Hydrogen +
Suspended in Oxygen (not Ozonized)

~~213 Immersed in oil of tar~~ -

213. Immersed in Sol N. Nitrate Calcium
Neutral

214 ——— acid -

215 ——— ~ Peroxide Hyd + 5% Silicate
Soda

216 ——— Peroxide Hyd 45 Water 5 Silicate
Soda

217 Water + Peroxide Barium
with 1% Sulphuric Pendicular
after leaf was put in —

218 Peroxide Barium Oil Succinic
+ Water -

219 Peroxide Barium Lactic Acid
+ Water.

220 Prosecide Barium Water
+ Glacial acetic acid —

221 Prosecide Barium Glacial
Acetic Acid + Ether —

222 Prosecide Barium + Ether

223 Part of #6 215 treated with
1/2 Prosecide Barium Water

Saturday 28 April 88

101 Small bottle Oil of Tar —

101a

102a —— croton oil.

103a —— oil of Anadenia.

104a —— Spruce —

105a —— Camphor —

106a —— Balsam Tolu.

107a —— Fusel oil

108a —— Succinic Acid —

109a —— oil Juniper Berries

110a —— Wormseed

111a Oil of Tansy

112a —— Juniper Berries

113a —— Thyme.

114a —— Organum —

115a —— Cubebs

116a —— Origanum

117a —— Pedments

118a —— Mace.

119a —— Nemlocks

120a —— Sesami —

121a —— Orange —

122a —— Olive —

123a —— Neatsfoot oil

124a —— Sassafras —

125a —— Cod Liver oil

126a —— Oleic Acid.

129a —— Cade oil

128a —— Oil of Caraway

129a Oil of Linseed
130a Sucum Conii
131a Glycerine
132a Essential oil of ~~Cop~~
133a Boiled oil
134a Turpentine
135a Gasoline
136a Astral Oil
137a Deodorized Benzene
138a Rapeseed oil
139a Pippen Cider Vinegar
140a Cotton Seed oil
141a Deodorized Naptha
142a Creosote
143a Paraffin Oil
144a Silicic Acid
145a Tartaric Acid in Alcohol
146a Chloroform

224 ~~Nitric~~ Binoxide Nitrogen
225 Sprayed with Peroxide Hydrogen
+ Suspended in Binoxide Nitrogen
226 Suspended in Nitrous oxide
vapour purified from Nitric
Acid vapours
227 In Hydrogen Peroxide with 2% Sulphuric Acid
228 In Hydrogen Peroxide with 2% 1% Caustic Potash
229 Mixed Nitrogen + Chlorine Gas.
Leaf sprayed with Peroxide Hydrogen
+ suspended in above.
230 Leaf suspended in mixed N+Cl.
231 Leaf sprayed with 1% Caustic Pot
+ suspended in mixed N+Cl.
232 Leaf suspended in mixed N+Cl

Monday 30 April 1888

147a Oil of Spike
148a — Laurel
149a — Citronella
150a — Cassia
151a — Cedar Lebanon
152a — Copaiba
153a Balsam —
154a Oil of Calamus
155a — Sweet Almonds
156a — Rosemary
157a — Rhue
158a — Birch
159a — Pear
160a — Fivewood
161a — Fennel
162a — Lemon
163a — Ylang Ylang
164a — Wintergreen

165a Pinus Sylvestris
166a Horsemint
167a Eucalyptus
168a Aniseed
169a Bergamot
170a Cypress
171a Riga Balsam
172a Oil of Stone wheat
173a Oil of Stone Mark
174a Oil of Savin

All the Amides (Fatty) & NH2
Aniline Volatile
Amides - Ammoniums Organic
Tetra Ethyl Ammonium
Carbonate Ammonia Bi Carb Am
175a Propylamine
176a Napthylamine
177a Pyridine
178a Picoline
179a Trimethylamine

Dry
Acetdiamine -
Acetonine.
Methylamine
Aniline ✓
Atropine -
Amylamine -
Ethylamine -
Dye wares -
Dipropylamine ✓
Pyridine.
Colchicine ✓

Tuesday 1st May 1888.

233 Sple of 162 treated in Sol 5% Carbonate Ammoniac water. Rolls it & Darkens it

234 Sple of 162 as in Sol 1% Carb Ammonia & water. then in 1% Sol Sulphuric Acid & water -

235 Sple of 225 in solution 1% Carb Ammonia -

236 Sple of 225 in Sol Alcohol & Carbonic acid. Did not lose color or taste acid, burnt too brightly -

237 Sple of 201 in Aniline oil NG (discolors)

238 - - - - - & Ether.

239 - - - - - Colchicine NG discolors -

240 - - - - - & Ether then treated - in water..

241 - - - - - Aniline & Alcohol

242 - - - - - Colchicine & Alcohol -

243 - - - - - Alcohol & Hay 2% Naphthylamine

244 - - - - - Alcohol. then in water

245 - - - - - Dipropylamine -

246 - - - - - In 1/4% Caustic Potash

247 Leaf suspended in & Nutr. & peroxide Hydrogen with 1/2% Caustic Potash -

248 Sple of 201 in Trimethylamine -

249 Pyridine (1/32 spk sm)
250 spk in Picoline
251 spk in Naphthylamine
252 spk .225 suspended over Hydro-
-Iodic Acid -
253 spk .225 immersed in watery
Solution Hydriodic Acid —
Say 2% acid & water - -
254 spk 162 immersed in watery
Solution Hydriodic Acid
Say 2% acid & water.

180a Ether malonic 1/80
181a Ethylen monacetat
182a Ether Nitric
183a Ether Oenanthic
184a Ether Oxalicus
185a Ether Pelargonic
186a Ether Propionic

187a Ether Rhodanat Sulphocyanat
188a Ether Salicylic
189a Ether Sebacylic
190a Ether Succinic
191a Ether Sulfurat
192a Ethyl Tartat -
193a Ether valerianicus
194a Ethyliodat
195a Alcohol allylic
196a Alcohol Benzylic
197a Alcohol caprylic -
198a Alcohol Cummicum
199a Alcohol Octylic -
200a Acetal
201a Aceton Chloral
202a Ethylenalcohol
203a Ether acetic -
204a Ether Butyricus Cum Opk
205a Ethylbenzohl
206a Ether Carbonic -

207a Ether Cyanic -
208a Ethylen Chlorhydrin -
209a Ethylen Chlorat
210a Ethyliden Chlorat
211a Zimtsaure Aethyl
212a Ether Cyanat
213a Ether dichlorat -
214a Ether Disulfurat
215a Ether Formicic -
216a Ether Hydrochlor Chlorat
217a Ethyl Dichloracetat -
218a Anisaldehyd
219a Anethol
220a Anisol -
221a Aseptol -
222a - Benzoylamin
223a Benzobutylic Alcohol
224a Zimmtsaure Aldehyd

225a Amylen
226a Amylamine
227a Amylether
Tuesday
228a Acetatyl Amyl dlaff 2.188
229a Amyloxyd Butyric
230a Amylium Bromat
231a Amyl Chlorat
232a Amyl Cyanat
233a Amyloxyd Formicic
234a Amyl Jodat
235a Amyl ~~Proportionic~~ Nitrat
236a Amyl Proportionic
237a Amyl Rhodanat
238a Amyl Sulfurat
239a Amyl Hydrosulfurat
240a Benzol Benz Acid Benzoic
241a Benzyl Bromat -
242a Benzyl Bichlorat
243a Benzyl Chlorat

214a Benzoylchlorid Isobuttersaure
215a Benzolmonochlorat
216a Benzolmonobromat
247a Benzonitrit
248a Benzophenon
249a Benzolsulphochlorid
250a 1849 Marshalls
251a Butyron
252a Butyrin
253a Butylnitrocresum
254a Butylchlorat
255a Caprylin
256a Carboneum Tetrachlorat
257a Carboneum Dichlorat
258a Chlopicrin
259a Diethylamin
260a Diethylanilidine
261a Dichlorhydrin
262a Dimethylacetalcarbinol

263a Dimethylresorcin
264a Dibrenzylmethan
265a Dipentin
266a Eugenol
267a Formamid
268a Furfurol
269a Guajakol
270a Hexyliodat
271a Butylamin (iso)
272a Isobutylaldehyd
273a Butylmercaptan (iso)
274a Amylmercaptan iso
275a Butylisoacetic
276a Isobutylacetat
277a Ethyl Isobutyrat
278a Isobutyl bromid
279 Isobutylben Joch
280 Isobutylenbromid
281 Butylisochromat

282a Isobutylbutyrat
283a Isobutylisobutyrat
284a Isobutylchlorid –
285a Butyl iso formicic
286a Isobutyl formiat –
287a Isobutyl iodid –
288a Methyl iso butyrat –
289a Isobutyl nitrat
290a Butyl iso nitric
291a Isobutyl nitrit
292a Isobutyl valeria
293a Propylacetic (iso)
294a Isopropyl Alcohol
295a Isopropyl Bromide
296a Propylbutyric iso –
297a Isopropyl Iodid
298a Kresol meta
299a Kresol ana Kheerol.
300a Methylamin –
301a Methyl acetic
302a Methyl acetessig ether
303a Methylanilin
304a Methylsalicyl Benzoic
305a Methyl Bichlorid –
306a Methyl Butyric –
307a Methyl carbonat.
308a Methyl Chloroform –
309a Methyl Cyanid Acetonitril
310a Methyldiphenolamin
311a Methyl formicic
312a Methyl oxyd Salicylsäure Salicylic
313a Methyl propionic
314a Methylpropylketon
315a Methylsulfocyanat
316a Methyl valerianic
317a Mononitroparacresylol.
318a Nitromethan
319a Nitropenthan
320a Nitrosodiäthylin
321a Nitrotoluol

322a Nitrotoluol meta
323a Nitrotoluol Para
324a Oenanthol
325a Pyridin
326a. Ethylchloroid
327a. Propionitril
328a Propylaldehyd -
329a Propylbromat.
330a. Propylchlorat
331a Propyl formicus
332a Propylioidat -
333a Propyl propionic
334a Propyl valerianic
335a Pseudobutyl Chloroid
336a Resineon
337a Styron
338a Terpinol
339a Tetramethyl ammon hydr sol
340a. Trimethylamon. hydr sol
341a Toluol chlorat
342a Toluol cromat
343a Toluidin meta

344a Trimethylen cromat
345a Trimethyl carbinol
346a Trimethylamin Hydrochlor.
347a. Xylenol meta
348a Xylol -
349a Xylidin -
350a Valeryl Chlorat

Thursday 3 May 1888.

255 In fuel gas - (Sprayed walls)
256 (160) In sol Tartaric Acid. Alcohol
+walls + washed in water.
257 (160) In sol 1/4 % Caustic Potash
+walls -
258 In Chlorine (+ve)
259 (160) In sol Tartaric Acid + walls
+then in 1/4 % Caustic Potash

260 Hydrogen bottom wetted

Friday 4 May 1888

357a Pulv. Rubrum only Asphalte

352a $C_{17}H_{33}COOK$

353a $C_{10}(OH)_2$

354a SH_2

355a $C_3H_6O_6Sa1$

356a $C_2H_5(OH)$

357a $(C_2H_5)_2O$

358a Ether Petrolei from Boston Basin

359a Calcis Sulphatis xx

360a Ammonia Carbonate

361a Ferrocyanide Potassium

364a $K_3Fe_6C_{16}$

362a Aq Calc Caustic

364a $(NH_4)_2S$

365a Fe_2Cl_6

366a Ammonia Sulpho Cyanid

367a Ammonia Chlorid

368a Baryta Mixture

369a $Mg\,SO_4$

370a Laurinum acid

371a $\{COOH\}_{COOH}$

372a NH_4HCO_3

373a Allyl sulphocarbylamin

374a Allylenkyd

375a allylamin

376a Cumarol

377a Cumidin Isopropylanmede benzol

378a Pseudocumol

379a Cymol

380a Acid Salicylos

381a Acid Trichlorbutyric

382a Acid Undecylin saure

383a Acid valerianic

384a Acid propionic

385a Acid pyrotraubensaures.

386a Acid dichloracetic

387a Acid Cressylic

388a Acid Boro Wolframic

389a Acid Capronic

390a Acid Caprylic —

391a Chloroacetic acid

392a Iron Chrome —

393a Cadmium boro wolframic

394a Carbon bichlorate.

395a Schwefelsawrechlorhydren

396a Valeraldehyd

397a Kalium Lactic

398a Chinolin

399a Iodide Amyl

400a Acid ~~Phospho Methylene~~ Peroxide Hydrogen

204 Dried Spraying Hydrogen Peroxide + Ironing ING

401a 75% Peroxide Hydrogen + 25% Sulphate Calcium Sol

402a 75% Peroxide Hydrogen + 25% Sulphate Magnesia Sol

403a 75% Peroxide Hydrogen + 25% Carbonate Ammonia Sol

404a 75% Peroxide Hydrogen + 25% Caustic Calc Aq

405a ~~75 25~~ Peroxide Hydrogen ~~25~~ Sol Chlor Am ~~Aq~~ Baryta

406a 40% Peroxide Hydrogen + 60% Sol Chlor Am

407a 75% Peroxide Hydrogen 25% Phosphoric water

408 75% Peroxide Hydrogen 25% Baryta Mixture

Saturday 5 May 1888

409a 95% Peroxide Hydrogen 5% Tartaric Acid.

410a 95% Peroxide Hydrogen 5% Calcic Nitrate Neutral

411a 95% ——— 5% Bichloride Iron

412a 95% ——— 5% Chlorate Potash

413a 95% ——— 5% Stannate Soda

414a 95% ——— 5% Hyposulphite Soda

415a 95% ——— 5% Oxalate Soda

416a 98% ——— 2% Acetate Potash

417a 97 ——— 3 Nitre

418a 97 ——— 3 Potato Starch

419a 97 ——— 3 Chloride Lime

420a 95 ——— 5 Citric Acid

421a 95 ——— 5 Ammonia Nitrate

422a 98% ——— 2 Boracic Acid

423a 97% ——— 3 Dextrin

424a 97% Peroxide Hyd. 3% Sulphate Alum.

425a 95% ——— 5% Sulphite Potash

426a 95% ——— 5% Carb. Potash

427a 95% ——— 5% Tetricum Vanadate

428a 95% ——— 5% Pyrophosphate Soda

429a 95% ——— 5% Bisulphite Soda

430a 95% ——— 5% Ammonia Hyposulphite

431a 95% ——— 5% Ammon. Nat. Phosphate

432a 95% ——— 5% Permanganate Potash

433 solution 5% Permanganate Potash in water

434 1 part of 145 immersed in 10% Hyposulphite Soda water

Monday 7 April 1888 arrived

432 Alcock [illegible]

433 Mumm's Natyo water

434 Mumm's Pure water

435 Mumm's Acetic water

474a Parabanic Acid water
475a Margaric " Alcohol
476 Malic " water
477 Hippuric " Alcohol
478 Creosotinic " "
479a Chlorocroton Acid " "
480a Guaiacum Benzoic " "
481a Ammon Fluorid water
482a Ammon Citric water
483a Ammon Gallic " water
484 " Molybdenic Ammonia water
485 " Oxalic water
486 " Sulphophenyl water
487 " Benzoic Alcohol
488a " Boracic water
489 " Disulfuric water
490 " Disulfurous water
491 " Phosphoric water
492 " Rhodanic water

493a Ammon Nat. Phosphoric water
494 Am — Wolframic Ammonia water
495 Calcium Xanthogenic water
496 Ammonia Calcium water
497 Tartrate Potash water
498 Calcium Silico Fluoric water
499 " Silicic water 319
500 " Sulphite water
501 " Phosphor water
502 " Oxalate water
503 " Fluoric water
504 " Hypophosphorous water
505 " Iodide water
506 " Nitrate water
507 " Citric water
508 " Bromid water
509 " Ethyl Sulfuric water
510 " Benzoic Alcohol
511 " Bicarbonate water

512 Natrum Boracic water —
513 " Bisulphate water
~~514 " Bisulphate~~
514 " Borocit hot water —
515 Muriatic Salt Natrum Water
516 Natrium Phosphoric water
517 —— Acetic water —
518 " Benzoic alcohol
519 " Ethylsulfuric water
520 " Bromid water —
521 " Buttyric - water —
522 Benzolsulphosaures Natrium water —
523 Natrium isobutylsulfuric water
524 " citric water
525 " chlorat water
526 " chlorid water
527 " Bisulphite water
528 " Bisulphite water —
529 Hydrogen Sodium Carbonate water —

530 Natrium Hypophosphis water
531 " Iodic " water —
532 " Nitrosum water
533 " " methyl sulfuric water —
534 —— Oxalic water sparingly —
535 Mannit - water
536 Natrium Stannic water
537 —— Salicylic water
538 Salicin water
539 Pyrophosphate Soda water —
540 Phosphate Soda water — —
541 Sulpho Carbolate Soda water
542 Magnes acetic water
543 Magnes benzoic water
544 " borocitric, with Sod. SO4
545 " boro citric water
546 " chlorat water
547 " carbonic water

548a Magnes. chloricum Hydrochloric acid water
549a — Hyposulphurous water
550 — Nitric water
551 — Silicic

Wednesday 7 May 88

Finding Solvents for 432—557.
Spotting on bay

Soaked tobacco leaves in WH_2 4 hours dryed them by hanging overnight ~~Suspended in Chloroform~~

~~do do 261~~

~~do do do 262~~

~~do do 263~~

Wednesday 9 May 1888.

Suspended soaked leaves in Chloroform
do 261
do do do 262
do do do 263
~~264 Solution in Calcium Nitrate~~
264 Suspended soaked leaves in NO_2
265 Solution Calcium Nitrate acid
266 1% peroxide Mg^{tr} by water 3 by fuming H_2SO_4 - boiled water previously with $Mn\,O_2$ to prevent metallic chlorides there might be
267 1% peroxide lead by water 3 by fuming H_2SO_4 stirred well agitated and then stood still for use tomorrow -

No 263 taken out of Chloroform & immersed in Infusion of tobacco water –

268 1g Potassic Bromide Barium –
3mg Sulfuric Acid
6g water –
well mixed & let stand for use tomorrow

Friday 11th

Thursday 10th May 1888.

No 269 (commenced by adding filtered clear solution of 266) precipitated Sulfuric Acid

~~270~~ 267

~~271~~ 268

332 Acetate Strontia water

333 Magnes Lactis hot water

334 Sulfo Phenylic water

335 Hypophosphorus water

336 Lithium Benzoic water –

337 Boracid water –

338 Chlorat water

339 Citric water

340 Ferro citrat

341 Oxalic Nitric water

342 Oxalic water.

343 Oxycyan water

344 Phosphoric – water

345 Salicylic water

346 Sulpho phenylic water

347 Sulphuric water

348 Carbonate Am water

349 Calcium Acetic - water –

350 Benzoic hot water –

351 Bromat water –

352 Butyric water

353 Citric - water

354 Chromic water

355 Hypophosphor water –

576 Alumin Lactici hot water
577 ——— Lacto phosphoricum
578 ——— oxalic (water?) –
579 ——— phenyle water –
580 ——— phosphidi water –
581 ——— phospholactic water –
582 ——— phosphate in food
583 ——— propionic water –
584 ——— cacchared water –
585 ——— silicic (pg)
586 ——— salicylic water
587 ——— sulphuricum (by water)
588 ——— sulphurosum (in sulphurous acid)
589 Manganese oxalic water
590 ——— Benzoic hot water
591 ——— Boracic – water
592 ——— Carbonic – acetic hot
593 ——— Chlorat water

594 Chromate Manganese water
595 ~~———~~
596 Manganese Hypophosphorous water
597 ——— Citric Hydrochloric &c
598 ——— Lactic hot water –
599 ——— Nitric water –
600 ——— Oxalic in H_2SO_4
601 ——— Phosphor sol. NaCl
602 ——— Sulphate, water –
603 ——— sulphophenylic water
604 Four. Ammo Chloricis water
605 ——— Prot Sulph. water –
606 ——— Ammon Tartras water
606 ——— + Ammon Persulph
607 ——— + Potass Tartras water
608 ——— Manganic Citric water
609 Boracic cyan/calcium water –
610 Ferric ——— water

611 Fort Acetic water
612 — Albuminat Hg water —
613 — Benzoic water
614 — Boro citric hot water —
615 — Bromat water —
616 — Chloric Sulph. water
617 — Citrate hot water
618 — Hypophosphorous water
619 — Lactic water
620 — Linat water
621 — Linat Alcoholicat
622 — Malic water —
623 — Phosphis in Am water
624 — Phosphorous dilute phosphoric acid
625 — Phosphis Lactic water
626 — Peroxidric water
627 — Pyrophosphoric ammonia water

628 Fort Salicylic water
629 — Sesquichloric water
630 — Succinic Ammonia water Sol.
631 — Sulfophenylic — water
632 — Tannic acetic acid —
633 — Tartrat water
634 — Sulphids — In water H_2S Sol.
635 Bismuth oxychlorat water
636 — Phosphoric Sol $(NH_4)_3Cl$
637 — Nitric Hg water
638 — Citric water
639 — Citrobromic Sol $(H_3N)Cl$
640 — Subcarbonat Sol Na_2Cl
641 Bromglycerin water —
642 Acetate Cadmium water —
643 Bromat — water

644 Cadmium Chlorat. Water
645 — Carbonate Sol. NH4Cl
646 — Nitrate water
647 — Sulpho phenylic Water
648 — Sulphurat water
649 Calcaria Nitric Water
650 Carbazol alcohol
651 ~~Casein~~
652 Nitrotoluol
653 Iodoform alcohol
654 Phenyl antipyrin alcohol
655 Nitro Phenol para alcohol
656 Nitro naphthalin alcohol
657 Terpenhydrat alcohol
658 Perchloride Fer water
659 Ferr. Sulphuric oxydul Wat
660 Hydrochlorid water
661 acetate Zinc water
662 Benzoic — water
663 Borace — hyperchlorous Ac
664 Chromic — water
665 Hypophosphorus Zinc water
666 Lactic — hot water
667 Phosphoric — (water
668 Phosphorus — water
669 Picrombric — water
670 Salicylic — water
671 Tannic — water
672 Sulphuric — Alcohol & Ch
673 Part 2 Bg Immersed in sol Ferric Ac
674 Part 2 Bg Immersed in sol Ferric Ac
neutralized with Ammonia
675 Part 2 Bg Immersed in alcoholic sol.
Ferric Acid & Ammonia

675 Part of 2 leaf in alcoholic Solution of Permanganate

676 Leaf in alcohol & Permanganate

677 Leaf in Picric acid & ammonia

678 — in American saffron Sol

679 Part of 269 ———

680 Part of 269 in Brazil wood Extract

681 Leaf in ———

682 Part of 269 in Fuchsia

683 Leaf in ———

2731 Leaf first soaked in water

2741 ½ hour partially dried

~~2751~~ & suspended 36 hours in

~~276~~ Chlorine Gas – sprayed

~~277~~ with ½% ~~Soda~~ Caustic

Potash & water & hung in

bottle over water

Monday 14th May 1888 – –

275. Soaked leaf in water ½ hour Suspended it in air to partially dry it – hung it in Chlorine 36 hours – placed it in lamp bulb Suspended by platinum wire & exhausted it in mercury pump –

276. Soaked leaf in water ½ hour put it through same treatment as 275 until bleached – Hung in open air for 1 hour sprayed with Caustic Soda Solution & hung over water –

277 Placed leaf in inverted jar full of water & displaced water gradually Chlorine Gas.

N G

Dried 275 in Edelman's air pump all the afternoon exhausting to a high vacuum & then letting in air & exhausting again & finally left it in all night

Tuesday 15 May 1888.

Cleaned and oiled air pump — took out 275 from receiver and put it in Gas oven to dry thoroughly. Mem decided although the smell was gone the taste was as acrid as before & on smoothing burning it there was very acrid smell — —

279 Put another part of 275 in air pump & continually exhausted receiver all that day left in vacuum all night.

279 Suspended leaf in Chlorine Dry

Wednesday 16 May 1888

279 Continued exhausting air pump with party 275 under bell jar all the morning until it had been subjected to the treatment for one day. Sprayed with 10% Caustic Soda solution & hung in bottle over ~~Sulphuric Acid~~ water —

280 Swabeden weak & hung partly dried & hung in Chlorine

281 do do

282 do do

283a placed 280 under air pumps & left in all night

Thursday 17 day 1888.

25[illegible] left 280m Chlorine Gas 16 hours.
+ then exhausted repeatedly in air pump

Made Saturated Solution Sesqui chloride Iron precipitated by Amm. Hydrate
Washed precipitate thoroughly
filtered to get rid of water.
Mixed residue with Sesquichloride
making basis Sesqui chloride Iron.

289 Made Solution 25% above solution
75% water + put in leaf

284 do do 15% solution

285 do do 10% —

286 do do 5% —

Friday 18 day 1888

65m Leaf in Ferrous Solution
Made Chlorous oxide with
3 pt. Hydric acid
4 — water
2 — Chlorate Potash
·8 — Tartaric Acid —

~~287~~ After heating up to 150°
gas came off vigorously —
~~288~~ Conducted it into water & obtained
golden yellow solution that bleaches
rapidly — Kept dark —

289 Suspended leaf in Gas — Dry
— Kept dark —

288 Immersed dry leaf in
ferrous solution

289 moistened leaf + Suspended in the Gas —

Made Euchlorine saturated Solution in water — + Suspended ~~in crystal~~ leaf

290 moistened leaf in water + suspended it partly in aqueous Sol of Chlorine beside partly in the Gas above —

291 dry leaf kept in Gaseous Chlorine beside 2 hours.

292 dry leaf in Euchlorine Gas

293 - aqueous Sol Euchlorine

294 Dilute aqueous Sol —

295 Dilute aqueous Sol Chlorous acid

Saturday 19 May 1888

296 Gaseous Hypochlorous Acid

297 Aqueous Sol

~~298~~ Gaseous

Made Dried passing Chlorine over Red oxide Mercury ~~worst~~ work afterwards prepared oxide Mercury by precipitating Perchloride Mercury with Caustic Potash Dried + heated up to 200° C.

Substituted for Red oxide + collected Gas by displacement.

298 Gaseous Hypochlorous Acid

Monday 21 May 1888

Mixed Pentachloride Phosphorus + Chlorate Potash + heated in water bath -

299 Suspended leaf in Gaseous mixture -

300 Immersed in aqueous Sol

301 Suspended in Gas -

Made quantity Chlorous Oxide and concentrated aqueous Sol. also dilute solution.

302 Immersed leaf in water for 1/2 hour then in aqueous concentrated solution - for 1½ hours then in water for ½ hour & then put to dry -

Tuesday 22 May 1888

Made Chlorous Oxide and passed it into ~~a~~ solution Acetate Potash & water in first Wolfe bottle & water in second Wolfe bottle -

303 Suspended Leaf in Acetate Potash Sol -

304 Dilute Solution Chlorous Acid Oxide in water

Made Chlorous Oxide by pouring 1 pt Chlorate Potash & water cold adding 4 ~~pints of~~ H_2SO_4, & gently raising the heat ~~up to~~ from 60 to 212 F in 2 hours - delivery tube cooled in water.

Explosion -

305 Leaf in Chlorous Oxide

Wednesday 23 May 1888

~~305~~ Tried making Chlorous Oxide passing it into Aqueous Solution Caustic Potash - but after running it for about 20 hours it Exploded - - - - - - - - - -

Bleached with Chlorous oxide Solution + Electrolysis of liquid on 10 hours - helped Dickson 2 hours.

Tried electrolysing aqueous Solution Chlorous Acid but did not bleach any quicker.

306. Leaf in solution Acetate of Iron saturated with Chlorine

Thursday 24 May 1888

307 Immersed part of Linen Alcohol Vitali

308 ——————— Alcohol -

Generated Chlorous oxide + carried into Solutions Acetate Alum, caustic potash, (solutions) ammonia making chlorite (ammonia + tobacco decoction)

309 Immersed 3 Skein Solution Acetate Alum -

310 Chlorous oxide passed through Tobacco decoction

311 ——————— do do Acetate Alum

312 ——————— Ammonia water

313 ——————— Caustic Potash -

Friday 25. May 1888

Continued passing Chlorous oxide through 310 311 312 313.

Tried 310 and found would bleach in 10 to 15 minutes it being an emboldened solution –

314 Chlorous Oxide through Solution Hyposulphite Soda

315 Chlorous oxide through Solution Sulphite Potash

Tried immersing leaf in 310 & then in Equal quantities passed Hydrogen & Odours Exhaled

Saturday 26 May 1888

316 Passed Chlorous oxide through very dilute Permanganate Potash Solution

317 do through Passed Hydrog

318 do —— Solution Sulphite Iron

319 —— —— Sal Ammonia

314 produced cloudy liquid & white precipitate which won't bleach

313 won't bleach Darkens –

315 rather cloudy with precipitate won't bleach.

316 Dark brown precipitate no bleaching properties –

Monday 28 May 1888 –

320 Chromous oxide in solution Acetate Alum treated – Leaf in

321 Solution Chromous oxide —

322 do (dilute) —

323 Treated 320 with Oxide Barium

324 —— Trioxide Antimony

325 —— Caustic Oxide Alum

326 —— Hydric Bismuth

327 —— red oxide Iron

328 —— Tin oxide

329 —— Peroxide Manganese –

330 —— Oxide Lead

331 —— Zinc –

332 —— Peroxide Lead –

333 —— Sol Nitrate Silver –

334 – Treated 321 with oxide Nickel –

335 —— very small quantity Oxide Barium

336 —— oxide Iron Disk

337 —— Finely powdered Iron

338 —— oxide Cadmium –

339 —— Cobalt

340 —— Cerium –

341 —— Hydric oxide Barium

342 —— BK oxide Copper –

343 —— Anhydric oxide Chromium

344 —— White oxide Antimony

Tuesday 29 May 1888.

Made the very concentrated solution
Chromic Acid
also dilutes solution —

345 Placed leaf in concentrated solution
× warmed it
346 Bleached yellow in 5 minutes
dodoids in dilute solution →

347 treated concentrated sol with Glycerine

348 ——— Aniline Oil

349 ——— Creosote Oil

350 ——— Bicarb Soda

351 ——— Stannate

352 ——— Ether

353 ——— Benzole

354 ——— Chloroform

355 ——— Collodion

356 Treated concentrated solutions with Suspensions

357 ——— Benzoic Acid

358 ——— Absolute Alcohol

359 ——— Carbolic Acid

360 ——— Sulphate Iron

361 ——— Arsenic

362 ——— Silver

363 ——— Copper

364 ——— Lead Nitrate

365 ——— Lead

Wednesday 30th May 1888

Decoration day

Thursday 31st May 1888.

366 Chlorous Baride solution 9/11 mixed with Caustic Soda Sol

367 Ex Caustic Pot Solution Saturated with Chlorous oxide

368 Made Chlorate Potash for Expt 162

Friday 1st June 1888

Crystallized Chlorate Potash - Made Perchlorate Potash recrystallizing several times to ensure the purity of Salt

Made by fusing Chlorate Potash until it parted with Salt on cooling then separated the Chloride & Perchlorate

Saturday 2 June 1888

Shewing visitors round during morning.

Finished Perchlorate Potash

Monday 4 June 1888

Made Chlorate Barium by passing Chlorine into solution Hydrated oxide Barium until saturated recrystallized separating Chloride from Chlorate

Tuesday 5 June 1888.
Made Perchlorate Copper by combining Perchlorate Potash & Chloride copper & recrystallizing separating the Chlorate Potash.

Wednesday & Thursday 6th June
Generated Hydrofluosilicic Acid Gas & passed into water.
Above not strong enough.
Made Hydrofluosilicic Acid by combining Hydrofluoric Acid & Silica.
Silica deposited
Precipitated Potash from Chlorate Potash leaving Chloric Acid.
Added Carbonate Baryta & filtered
Evaporated filtrate & weighed Chlorate Baryum obtained - Combined with sol Copper Sulphate - filtered & evaporated -

Friday 8 June 1888
3rd Made Chloroxus acid and passed dry gas into receiving jar with specific gravity of N_2 + O_2 + Cl_2
3rd Placed specific gravity of N_2 in solution 320 for 1 hour & compared to dry ~~gas~~ found that the part out of the water ~~had~~ gas suffered diminution of weight Equally with the part immersed -
3rd Immersed dry in Chloride Magnesia -
Prepared Chloride Magnesia for B162

Saturday 9 June 1888

Made Chloride Copper for 162
by passing Chlorous Acid
through solution Cuprous
Chloride Copper & Water —
Made Perchlorate Copper by passing
over boiling Perchlorate Cuprous & Potash
Chloride Copper & Chlorine prepared
+ Crystallized —

372 Passed Chlorous Acid into weak
Acid Solution Cuprous Chloride Sample
but found it would not Bleach
quickly — Only very little —
+ Acid the best —

Monday 11 June 1888

Made fresh supply Chlorous Acid
371 Solution for accurately testing the
loss of weight during immersion of
lead

373 Placed lead weighing 3.670 grams
in Chlorous Acid Gas for accurately
testing loss of ~~Gas~~ weight when ~~gas~~ lead is
suspended ~~it~~ in it —
Chlorate Bleach on adding an
acid —
Try heating finely powdered $HClO_3$ + excess
crystallized oxalic acid to 170° C will
produce Chlorous Acid gaseous +
Carbonic Acid —

Tuesday 12 June 1888.

Taken out 373 & weighed it
Found it weighed 4.180gr –
Exposed it to strong sunlight –
& afterwards to Sulphuretted
Sulphuretted Hydrogen vapour
375 Dried suspending leaf in
moisture steam & Chromic acid NG
376 Placed leaf weighing 3.880gr.
in Solution 374 after leaving it
374 hours in Solution took it
out washed it placed in dilute
Solution Hydrogen sulphide
Afterwards washed & dried
in Steam oven. Weighed when dry
3.650gr

375 Immersed leaf in 373
& afterwards washed in
dilute solution of Ammonia,
Hydrosulphuret – Again in
water. –

Wednesday 13 June 1888.

376 Immersed leaf in solution Chromic
Acide made by pouring Sulphuric
Acid on Chlorate of Potash under
water with small fragment of
Phosphorus & precipitated access
H_2SO_4 with Barium Carbonate NG
Cleaned and sealed air pump –
Made H_2SO_4 concentrated solution
at 0°

Thursday 14 June 1888—

Fitted up steam apparatus with old ice cooler - - -

378 Prepared dr 5 spls in Cl_2O_3 Sol. + after washing saturated in NH_4S

388 Steamed dr 5 spls for one hour immersed in Cl_2O_3 Sol for 1 hour, washed - immersed in bath NH_4S washed immersed in bath NH_3 (dilute) for NG (ammoniacal liquor too much)

389 Steamed dr 5 spls, immersed in dilute solution Ammonia water for 5 minutes, washed

and placed in solution Cl_2O_3 —

Friday 15 June 1888—

382 Steamed for 1 hour, placed in solution Cl_2O_3 after bleaching hung in SO_2 vapor.

383 Steamed for 1 hour placed in SO_2 vapor for 1 hour

384 Hung in steam oven for 6 hours to enable the vapor to permeate the entire fabric of the bag + introduced steam

384 Kept in steam 1 hour
In SO_2 1 hour
2 hr bath Barytic mixture
to try & reduce the SO_3 N.G.

385 Kept in steam 1 hour
In SO_2 1 hour. In Barytic
mixture back & then in ammonia
water to try & get back color N.G.

386 Suspended dry bag in
Chloride Nitrogyl 8 days
Gently Heating. Nitric &
Hydrochloric Acid & Chlorine

387 Suspended steamed bag
in Chloride Nitrogyl

Boiled rice water
vide Roberts process. Bleaching with
Millegrinous plants

Saturday 16 June

After steaming in oven
12 hours placed in wrist cage in
bar and conducted
fresh Chlorous Gas just
388 made. Bleached in 1 minutes
& the chemical action made
the jar very hot

389 Placed steamed bag (12 hours)
in Methyl Chloride Gas.
Burned it black.

Monday 18 June 1888
Filled up Chromous Oxide on large scale using steam oven for steaming.-

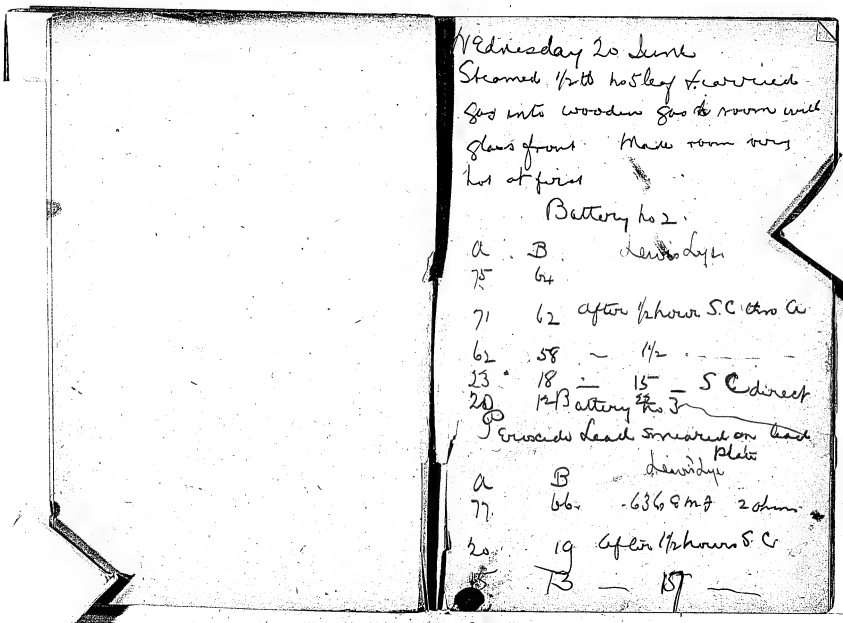
Tuesday 19 June 1888
Continued above passing in Chromous Oxide into the Oven & making it quite airtight

Eg. Electrolysed solution of Chromous Acid until the colour was quite out of it
Then I immersed bag in it
3/4 do do do do but added few drops Hydrochloric Acid

Battery 27
Positive
Zinc Porous cup Platinum Cyl
Carbon ~~cup~~ Chromic Acid
Dissolved red lead in Glacial Acetic Acid

Battery 26
Position 12
Zinc Chromic Acid Porous cup
Carbon ~~Porous cup~~ containing
Lewis Sup.

Battery 26
Position ~~12~~ 1
Zinc
Carbon cup Chromate Lead,
Bichromate Potash.



Wednesday 20 June

Steamed 1/2 lb hose & screwed
gas into wooden box & room with
glass front Made room very
hot at first

Battery No 2.

a	B	Lewis Dyer
75	64	
71	62	after 1/2 hour S.C thro A
62	58	— 1/2 — — —
23	18	— 15 — S C direct
20	12	Battery 2 No 3

Crocodile Lead Smeared on back Plate

a	B	Lewis Dyer
77	66	.6366 mf 2 ohms
20	19	after 1/2 hours S C
75	73	— 187 —

Battery No 9
Duplicate of No 3
Placed Something with wrong wells

a	B
75	62
73	60 after ½ hour S C through a
15	15 after 15 hours S C through a

Thursday 21 June 1888
After battery No 3 was running ½ hour
Mix & added Chloride Lime

a	B	
40	40 at first	
54	53 after 1 minute	
75	62 after 5	
15	60	after 1 hour S C
15	58	after 6 hours S C
		15 20 after 24 hours S C

Mark Hypochlorite Soda – with Lead

Porous cup Mercury & Arsenic amalgam
for B tarnished metal exposure read –
Caustic + H_2SO_4
No 5
Zinc + Lead
Chloride Lime + H_2SO_4

a	B	
43	55 at 1st reading –	after 3 hours
67	57	
50	57	after 1 hr
H_2SO_4		3 — 5 C 3 hours

Inverted over the battery

No 5 made up as No 3

Zinc Lead
Potash + Chloride Lime –
Lead the cracked with freshly drawn
Lead by Electrolysis –

a	B	
76	62	1st
72	60	after open circuit of 1 hour

Friday 22 June 1888 –

Battery 6 –

Porous cup containing Mercuric & Mercurous amalgam & amalgamated copper rod. Outside cell Amalgamated Zinc & Lead Lip.

A.	B.	
3	29	1st reading
22	33	after 5m S.C
26	35	15
15	20	— 1 hour
+	10	— ½ hours.

Battery No 7 –

Porous cup containing Mercuric & Mercurous amalgam. & amalgamated copper rod. Outside cell. Amalgamated Zinc H_2O $\frac{1}{2}$ SO_4 –

A	B	
8	30	1st reading (at once).
5	15	after 1 hour S. C.

Saturday 23 June

Setting up Battery table

Monday 25 June 1888.
Battery No 8.

Hypochloride Soda
Lead. Zinc –

a	B	
6	38	1st reading
4	31	after 5m S.C through
3	35	after 30m S.C.
2	30	after 1 hour S.C

Zinc became coated with a yellowish white precipitate & there was a yellowish precipitate.

Battery No 9
Hypochloride Soda
~~Lead~~ Zinc & Copper

a	B	
7	55	1st reading –
5	53	after 5m S.C through
3	45	after 30m S.C.
2	38	after 1 hour S.C

Zinc became coated with a white substance & there was a white precipitate at bottom of liquid –

1904.

Standard Model battery

Lallonde Cell. Zinc Copper
Copper oxide Lewis Lyt.

a	B	
11	53	1st reading
11	55	after 5m S.C thro a
8	40	30m S.C.
1.5	26	24hours S.C

1904

Lead coated with white coating by ~~alkaline~~ dipping by Chromium oxide

Zinc Amalgamated

Lewis Lyt.

a	B	
5	33	1st reading -
3	37	after 30m S C
2	16	45 - S.C.

Battery ran down after

1 hour S.C.

Tuesday 26 June 88

Filled up resistance for
Electrolytic action

Dried electrolyzing Tungstate Sod.
to deposit Tungsten N G

Dried do Tungstic Acid +
Hydrochloric Acid.

Battery 11

Solution Tungstate Soda
few drops H_2SO_4 Zinc Copper

a	B	
4	50	1st reading -
2	35	after 30m S.C.
1.5	25	2 hours S.C.

Liquid is turned deep blue
by the H_2SO_4

Wednesday 27 June 1888
Battery 12
Zinc Copper Phosphoric Acid

A	B	
4	50	1st reading
2	42	after 10m S.C.
2	32	30
2	35	1½hr S.C.

Battery 13
tried with Porous cell containing Solution Caustic Potash

A	B	
3	18	1st reading
5	5	after 30m S.C.

Battery 14
Position 1
Zinc + Graphite Bichromate Potash + sulphuric Acid
Grade

A	B
4	54

Thursday 28 June 1888
Battery 14
Position 1
Zinc Amalgamated
Arsenic.
Bichromate Potash + H₂SO₄ Sol.

Coarse A	Fine B	
74	73	1st reading
74	70	after 5m S.C.
73	74	16

With 21 Ammeter current

Battery 157
Position 2
Zinc
Arsenic
~~10% Sulphuric Acid~~
put on 1-43.

A	B	
88	78	1st reading, 11 ohms 1288 Op. 6 dil.
68	75	100 ohms resistance in
88	78	after 5m S C.
88	78	after 30m S C.
88	78	" 1 hour S C
87	77	" 1½ hours S. C.
66	75	" " " 10 ohms in circuit
87	77	" 2 hours S. C.
81	75	" 3 " "
~~55~~ 60	~~47~~ 45	" 4 "

Battery 15
Position 3
Zinc
Graphite
~~Bichromate Potash~~ Chromic Acid
Acetic Acid
Put on 2-30

Battery 15
Position 3
Zinc plate amalgamated with Acetic Acid
Encircling porous cell containing Carbon in Solution of Potassium Bichromate Calcium Chloride Concentrated Chloride Copper

A	B	
80	88	1st reading
82	72	after 5m S. C
78	62	" 30 "
77	62	" 1 hour S C
70	57	" 2 hours S C
48	55	" 3 "

Battery 16 B

Zinc Porous Alt. Chromic Acid
Copper Lewis Lyt
Porous

a B Battery 16 — Position 2.57
Position 2

Zinc Amalgamated
Arsenic
Lewis Lyt.

A	B	
66	58	1st reading
57	45	10m S C
54	40	30m S C.
50	39	1 hour S. C.
51	38	2 ———
50	40	3 ———

Battery 17
Position 57

~~Zinc Porous Alt Lewis Lyt~~
~~Copper Chromic Acid~~
3-20.
Arsenic in Porous cell containing Chromic acid & Hydrochloric Acid —

Zinc in cell containing Hydrochloric Atlantic Selection Acid

A	B	
62	62	1st reading —
57	60	~~15m S C~~ 5m S C
30	50	30 minutes S. C.
20	45	after 1 hour S. C.
16	45	— 2 hour S. C.

Battery 19
Position 5

Zinc Lewis Lyt - ~~Porous cup~~
Lead cup filled with Chromic Lic
Put on 4-10.

A	B	
70	63	1st reading.
64	60	45m S.C.

no good fell to zero after 1 hour

Battery 19
Position 6

Zinc in Lewis Lyt. Put on 4-~~15~~ 20
~~Lead cup filled Chromate Acid~~
~~Sulphuric Acid 10%~~
Arsenic in Porous cup containing Argentic Oxide mixed with Lewis Lyt.

A	B	
33	55	1st Reading
35	58	5m ——— S.C.
34	52	30 ———
25	50	1 hour. ———

Battery 20
Position 9

Zinc
Carbon
~~Lead exp. with Chromate Pot.~~
Bichromate Potash.

a	B
90	~~85~~
~~60~~	~~77~~ with 10 ohms.
7	82
88	83 after 20 m S.C.
87	82 — 40 —

Battery 22
Position 9

Zinc in Porous cup Chromic Ac
Lead Lewis Hyp

Tuesday 3 July 1888.

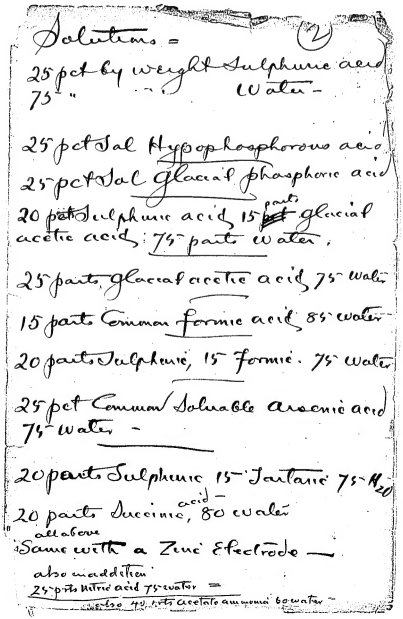
Experiment for Crystallized
Hydrated Peroxide Lead —
Made solution Acetate Lead.
Precipitated spongy Lead
Dissolved lead in solution Chlorous
Acid solution
Do in solution Acetate Potash & Chlorous
Nitrogen & Chloro Acid Acid —
Iron
Red lead in Chloric — turns to Powdered
Peroxide turns to
Metallic Lead in Peroxide Hydrogen

Battery 23.
Position 10.
Zinc Porous cup Lewis Lyt
Lead Chromic Acid.

Tuesday 10 July 1888.

Made PbO_2 by boiling Pb_2O_3 in dilute HNO_3
washed in boiling water (black powder)
1 Made PbO_2 by agitating PbO (scaly) in
small By H_2O.
(To be boiled in water)
2 Made PbO_2 by agitating PbO (powder) in
By H_2O
(To be boiled in water)
3 made PbO_2 by passing Cl through PbO scaly
Suspended in water
4 made PbO_2 by passing Cl through PbO
to be washed
Solution a citrate Lead to be washed
5 made PbO_2 by agitating Pb_2O_3
in By H_2O

[ITEM FOUND IN BOOK]



Solutions = (2)

25 pct by weight Sulphuric acid
75 " " Water -

25 pct Sol Hypophosphorous acid

25 pct Sol glacial phosphoric acid

20 pct Sulphuric acid, 15 part glacial acetic acid; 75 parts water.

25 parts glacial acetic acid, 75 Water

15 parts Common formic acid, 85 water

20 parts Sulphuric, 15 Formic. 75 Water

25 pct Common Soluable Arsenic acid 75 Water -

20 parts Sulphuric 15 Tartaric 75 H_2O

20 parts Succinic acid, 80 water

all above
Same with a Zinc Electrode —

also made thus
25 pts Nitric acid 75 water =

Also 40 pts Acetate ammonia 60 water -

[ITEM FOUND IN BOOK]